

Serial No.: 10/722,873
Group Art Unit No.: 2826

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Original): A vertical fin formed on a substrate, comprising:

a top surface being substantially parallel with a horizontal surface of the substrate;

at least two opposing side surfaces being substantially perpendicular to said horizontal surface to form the vertical fin;

an outwardly sloped structure at a base portion of the vertical fin,

wherein a surface of said outwardly sloped structure does not undercut said at least two opposing surfaces of the vertical fin.

Claim 2 (Currently amended): ~~The vertical fin of claim 1,~~ A vertical fin formed on a substrate, comprising:

a top surface being substantially parallel with a horizontal surface of the substrate;

at least two opposing side surfaces being substantially perpendicular to said horizontal surface to form the vertical fin;

an outwardly sloped structure at a base portion of the vertical fin,

wherein said outwardly sloped structure has a surface that does not undercut said at least two opposing surfaces of the vertical fin, and wherein said outwardly sloped structure is formed by a self-limiting product reaction.

Claim 3 (Original): The vertical fin of claim 1, wherein the starting substrate is an SOI wafer.

Claim 4 (Original): The vertical fin of claim 1, wherein the substrate has one or more semiconductor layers.

Claim 5 (Original): The vertical fin of claim 3, wherein the substrate has one or more insulators proximate said one or more semiconductor layers.

Claim 6 (Original): The vertical fin of claim 3, wherein the vertical fin is formed from said one or more semiconductor layers.

Claim 7 (Currently amended): ~~The vertical fin of claim 1,~~ A vertical fin formed on a substrate, comprising:

a top surface being substantially parallel with a horizontal surface of the substrate;

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at least two opposing side surfaces being substantially perpendicular to said horizontal surface to form the vertical fin;

an outwardly sloped structure at a base portion of the vertical fin,

wherein said outwardly sloped structure has a surface that does not undercut said at least two opposing surfaces of the vertical fin, and wherein said sloped structure has a gentle slope.

Claim 8 (Original): The vertical fin of claim 1, wherein said sloped structure is a dielectric material.

Claim 9 (Original): The vertical fin of claim 8, wherein said dielectric material is oxide and/or nitride.

Claim 10 (Withdrawn): A method of forming a vertical fin on a substrate comprising the steps of:

providing the substrate having one or more semiconductor layers and one or more insulators;

forming one or more vertical fins from said one or more semiconductor layers;

healing damage resulting from said step of forming said one or more vertical fins; and

providing a sloped base structure to said one or more vertical fins.

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Claim 11 (Withdrawn): The method of claim 10, wherein said substrate has a first semiconductor layer that underlies a buried insulator that in turn underlies a second semiconductor layer.

Claim 12 (Withdrawn): The method of claim 10, wherein said substrate is a single crystal SOI wafer.

Claim 13 (Withdrawn): The method of claim 10, wherein said substrate is a non-SOI wafer.

Claim 14 (Withdrawn): The method of claim 10, further comprising the step of:

providing a hard mask film on at least one of said one or more semiconductor layers.

Claim 15 (Withdrawn): The method of claim 14, wherein said hard mask film is a silicon dioxide or a silicon nitride.

Claim 16 (Withdrawn): The method of claim 14, further comprising the step of:

providing a photoresist layer above said hard mask film.

Claim 17 (Withdrawn): The method of claim 16, further comprising the steps of:

patterning said hard mask film as desired; and

removing said photoresist layer and/or at least one of said one or more semiconductor layers by a suitable chemical process.

Claim 18 (Withdrawn): The method of claim 10, wherein said step of healing damage is accomplished by a sacrificial oxidation and a sacrificial oxide clean.

Claim 19 (Withdrawn): The method of claim 10, wherein said step of providing a sloped base structure to said one or more vertical fins is accomplished using a self-limiting product reaction.

Claim 20 (Withdrawn): The method of claim 19, wherein said sloped base structure is integral to both said one or more vertical fins and said one or more insulators.

Claim 21 (Withdrawn): The method of claim 20, wherein said sloped base structure is suitable to prevent any undercutting of said one or more vertical fins.

Claim 22 (Withdrawn): A method of forming a FinFET from a substrate comprising the steps of:

providing the substrate having one or more semiconductor layers and one or more insulators;

forming one or more vertical fins from said one or more semiconductor layers; and

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providing an outwardly sloped base to said one or more vertical fins via a self-limiting reaction.

Claim 23 (Withdrawn): The method of claim 22, wherein said self-limiting reaction includes HF and ammonia.

Claim 24 (Withdrawn): The method of claim 22, wherein said self-limiting reaction includes HF and ammonia in combination with aqueous HF.

Claim 25 (Withdrawn): The method of claim 22, wherein said self-limiting reaction results in a reaction product layer that expands in volume, wherein said reaction product layer limits the reaction at a base of said one or more vertical fins.

Claim 26 (Withdrawn): The method of claim 22, further comprising a step of removing a sacrificial oxidation, wherein said step of removing said sacrificial oxidation is done simultaneously with said step of providing said outwardly sloped base to said one or more vertical fins via a self-limiting reaction.